

### Abstract

A magnetic sensor system (1) is provided that contains sensor elements (5, 6) that are sensitive to magnetic fields, the electrical properties of said sensor elements being modifiable according to a magnetic field that can be influenced by a mobile, passive transmitter element (8). The magnetic sensor system (1) includes two sensor elements (5, 6) in a gradiometer system, each of which is assigned to one of two permanent magnets (2, 3) having a predetermined separation. In terms of their dimensions, separation and position relative to the sensor elements (5, 6), the permanent magnets (2, 3) are located such that the offset of the output signal of the sensor elements (5, 6) is minimized in the gradiometer system.

(Figure 1)